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Greg Messina, a junior business major from Long Island, N.Y., paints the Congress of the South 40 facade for Thurtene Carnival. The carnival, held last weekend, is the largest and oldest student-run carnival in the nation. Event proceeds will benefit the St. Louis Transitional Hope House, which helps families break the cycle of homelessness.

A model of cooperation

Universities pool resources to offer innovative engineering degree

They're 30-something, married with children, burdened with bills to pay and twin diminishing resources — time and money. Many of them punch a time clock and work more than 40 hours a week, yet they're beset with a simmering drive to change their lives. So, why not change course in mid-life and become an engineer?

That's the profile and logic of typical students enrolled in one of the most distinctive engineering programs in the world, the University of Missouri-St. Louis/Washington University Joint Undergraduate Engineering Program.

A concept as innovative as the creation of the junior college system after World War II, the joint program began very modestly in early 1993 with a tiny enrollment of eight students. In less than two years, the program has expanded phenomenally to 188 students — 65 upper division students and 123 pre-engineering students. It is unique among all known engineering programs because it combines the efforts and resources of two contrasting universities with differing flavors and missions to achieve a common goal: the

availability of an affordable engineering degree to demographic groups who ordinarily would be lost in the academic shuffle. These groups encompass, among others, "mature" students, with an impressive representation of women and minorities.

"There just hasn't been an engineering education alternative in the St. Louis region for the kind of student enrolled in the joint program," said William P. Darby, Ph.D., professor and chair of the Washington University Department of Engineering and Policy and dean of the joint program. "When the two institutions were considering creating the program, we looked all around for a model and couldn't find one. We've pretty much crafted the program based on combining the strengths of the two schools to give students an opportunity that wasn't available before."

"These aren't the kinds of students who are going to pack up and move out of state or even to Rolla or Columbia and live two years in the dorms. These are people who are literally installing car stereos or selling computer software during the day, punching out at 5 p.m. and taking courses at 5:30 at night, footing the bill on their own."

Rolla and Columbia, located in central Missouri, are University of Missouri System campuses with engineering curricula. Each is at least a two-hour drive from St. Louis. The University of Missouri-St. Louis and Washington University are only about 15 minutes apart from each other via interstate.

"The program provides an opportunity for students who are place bound to get an engineering degree at reasonable tuition rates," said Nancy Shields, Ph.D., University of Missouri-St. Louis assistant professor of sociology and associate dean of the program. "This is the first time anything like this has been available in St. Louis, a region of 2.3 million people. The University of Missouri-St. Louis has wanted an engineering program for more than 20 of its 31 years, and now through this cooperation, there finally is one, and a very good one at that."

The program provides bachelor's degrees in electrical, mechanical and civil engineering. There also is a minor in environmental engineering available.

In the collaborative program students

Continued on page 8

Knock on wood

Horticulturist helps preserve campus' age-old trees

There is a giant Scotch Elm just east of Brown Hall. Its heavy branches grow not up, but out and down. Their gnarled fingertips brush the ground in a wide circumference. A footpath winds between the 80-year-old trunk and its wide, arching tentacles, allowing pedestrians hustling from the parking lot to campus the fleeting feeling of being deep in a primeval forest.

It is one of horticulturist Paul Norman's favorite spots.

"When I first saw this tree, I thought it had been struck by lightning, but its growth habit is naturally horizontal instead of vertical," said Norman. "My guess is that it was planted around 1906-1907. It is healthy and strong. The shiny

bark is not characteristic of the tree; it's characteristic of people climbing on the tree."

Norman, the University's one-man horticultural staff, is about one-third of the way through a detailed inventory of trees on campus. Since he started seven years ago, 60 trees have had to be removed for a variety of reasons, including disease, safety threats and plain old age. The University tries to replace every tree it removes.

"The unique thing about this campus is its age. That also hurts us. Some of our trees are at the end of their life expectancy," Norman said. "They begin to break down, need repairs and to be replaced. Like a human, the healthier a tree is, the less likely it will get a disease."

Three of four beautiful elms planted in Brookings Quadrangle were removed when they fell victim to Dutch Elm disease. The American Elm in the southwest corner is one of the few remaining large specimens of this once common species. Until the 1960s, when Dutch Elm disease killed off almost all large examples of this tree, the American Elm was the traditional backbone of college landscape design.

"We do not know why this remaining example in the quad has stayed in relatively good health," said Bill Wiley, manager of maintenance operations. "This specimen may have unique genetic characteristics that are providing a defense against disease." Faculty and staff in the

Continued on page 6

Employees embrace 'Service for Success'

After only seven months, "Service for Success" administrators say they are well ahead of their goal of training every University staff member in the program's principles by 1997. Since September, more than 400 employees have participated in the training program, which stresses communication and other skills in providing exceptional service and working more effectively.

"The level of participation has far surpassed our original goals," said Tena Combs, "Service for Success" administrator. "Employees are reporting that the program has helped them both professionally and personally. At the rate we're going, all University employees will have gone through the program well before our original goal of 1997."

The "Service for Success" program was introduced to Washington University last February after employees said, in focus groups, they wanted training that would help them do their jobs better and learn about other areas of the University. The program was developed with the help of Mary Ammerman, a service training consultant with Ammerman Associates Inc., based in Wayne, Pa. It is being carried out by about 40 University employees who were trained in the program's principles last summer. According to the mission statement, their goal is "to provide an ongoing service training program for the benefit of those whom we serve (students, parents, alumni, faculty, colleagues and others) and to help us all be more effective in what we do in support of the mission of Washington University."

In September, Hilltop Campus employees received a letter from Chancellor William H. Danforth inviting them to participate in the program. Immediately, requests came pouring in from every school, department, division and office on campus. The training, which involves five half-day sessions, is being conducted at the West Campus Conference Center.

During the sessions participants learn how to communicate better, provide better service, manage communications and handle difficult situations.

Training sessions emphasize experiential techniques, including real life simulation, problem-solving and case studies. Universal themes, such as cultural diversity and empowerment, are included. Classes are composed of heterogeneous groups, crossing departmental and role boundaries, as well as different types of service areas to encourage communication and cooperation among the administration, departments and schools.

"The training helped me see service and its purpose here at Washington University in a new light," said Lina Yong, an administrative assistant at the Career Center. "Not only did it help me develop better commu-

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Study shows patients' attitudes about chest pain vary; findings could affect angina treatment

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Fashion students premiere designs ranging from irreverently flamboyant to classically practical

Medical Update

Patients' attitudes about chest pain vary; findings could alter treatment

Doctors treating patients with chest pain need to pay more attention to how bothered patients are by their symptoms, School of Medicine researchers reported in the April 19 issue of the Journal of the American Medical Association. The study shows that attitudes about pain vary substantially, even among patients with similar severities of angina or chest pain caused by heart disease.

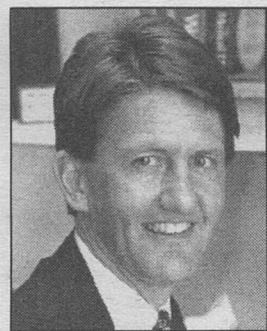
importance of the preferences of the individual patient." Because one of the main benefits of angina treatment is to reduce symptoms of pain and discomfort, finding the best treatment should depend, in part, on how bothered each patient is by his or her symptoms, Nease said.

Using a computerized interview, researchers measured 220 patients' attitudes toward their chest pain. The

measurements were repeated two weeks later to assess reliability.

Results showed substantial variation in how patients were bothered by their symptoms. For example, 33 percent of patients with mild pain symptoms were more bothered by their

"We found that some individuals are much more bothered by their pain than others — even among patients with similar levels of symptoms."



Robert Nease

Robert Nease, Ph.D., assistant professor of medicine, who conducted the study while on staff at Dartmouth Medical School, said standard guidelines for treating angina primarily are based on objective measurements of disease severity.

However, those guidelines do not take into account how patients feel about their symptoms of pain and discomfort.

"We found that some individuals are much more bothered by their pain than others — even among patients with similar levels of symptoms," Nease said. "Guidelines are often silent about the

symptoms than were patients with severe symptoms. Nease said this finding suggests that guidelines for managing chest pain should be based on preferences of an individual patient rather than on symptom severity alone.

"Making decisions without taking into account how the patient feels about symptoms could lead to inappropriate treatment," Nease said.

"Good decision-making should respect both the best available scientific information and the preferences of the individual patient."

— Mary Carollo

Study lays framework for wound-healing drugs

A study published in the April 21 issue of the journal Science lays a framework for the search for new drugs to promote the healing of wounds and burns. Investigators at the School of Medicine describe small molecules that stimulate cell division by promoting the binding of fibroblast growth factor (FGF) to its receptor. FGF, which is present in wound fluid, encourages healing by speeding the production of skin cells, collagen-secreting cells and cells that form blood vessels.

In 1991, David M. Ornitz, M.D., Ph.D., assistant professor of molecular biology and pharmacology, and colleagues showed that FGF must link up with heparin before it can bind to its receptor and trigger cell division. Heparin is a large sugar molecule that plays many roles in the body. The relevant part of the heparin molecule is different from the part that prevents blood clotting.

In the current work, Ornitz tested synthetic heparin fragments that contain just two to four sugar building blocks out of the dozens that are strung together in the natural molecule. Some of these fragments stimulated division of cultured cells just as well as native heparin.

Gabriel Waksman, Ph.D., assistant professor of biochemistry and molecular biophysics, determined the 3-D struc-

tures of the complexes between the biologically active fragments and FGF, using X-ray crystallography. "We were surprised to find several sites where the synthetic compounds can bind," he said. "Only one of these was known before, but that one had little biological activity."

Ornitz suggested in 1992 that the globular FGF molecules team up in pairs to activate the FGF receptor — such molecular pairs are called dimers. The newly discovered binding sites lie between the two halves of the dimer. "We are proposing that the sugar sits between the two FGF molecules and acts as a kind of glue," Ornitz said. "The FGF molecules in turn bring receptor molecules together."

Heparin itself is highly charged because many of its sugar building blocks are modified with negatively charged sulfate groups. But neither the synthetic fragments nor the new binding sites are highly charged, suggesting that FGF can recognize non-sulfated parts of the heparin molecule.

"These findings could open the door to drug design," Ornitz said, "because this is the first time we have a molecular understanding of the way heparin interacts with FGF and activates the FGF receptor."

— Linda Sage

Human studies conference to be held in St. Louis

The School of Medicine and the Jewish Hospital of St. Louis will present a conference May 4 and 5 about scientific, ethical and legal issues related to medical research involving human subjects. Meharry Medical College in Nashville, Tenn., also will sponsor the conference, which will be held from 8:30 a.m. to 5:30 p.m. both days at the Regal Riverfront Hotel in downtown St. Louis.

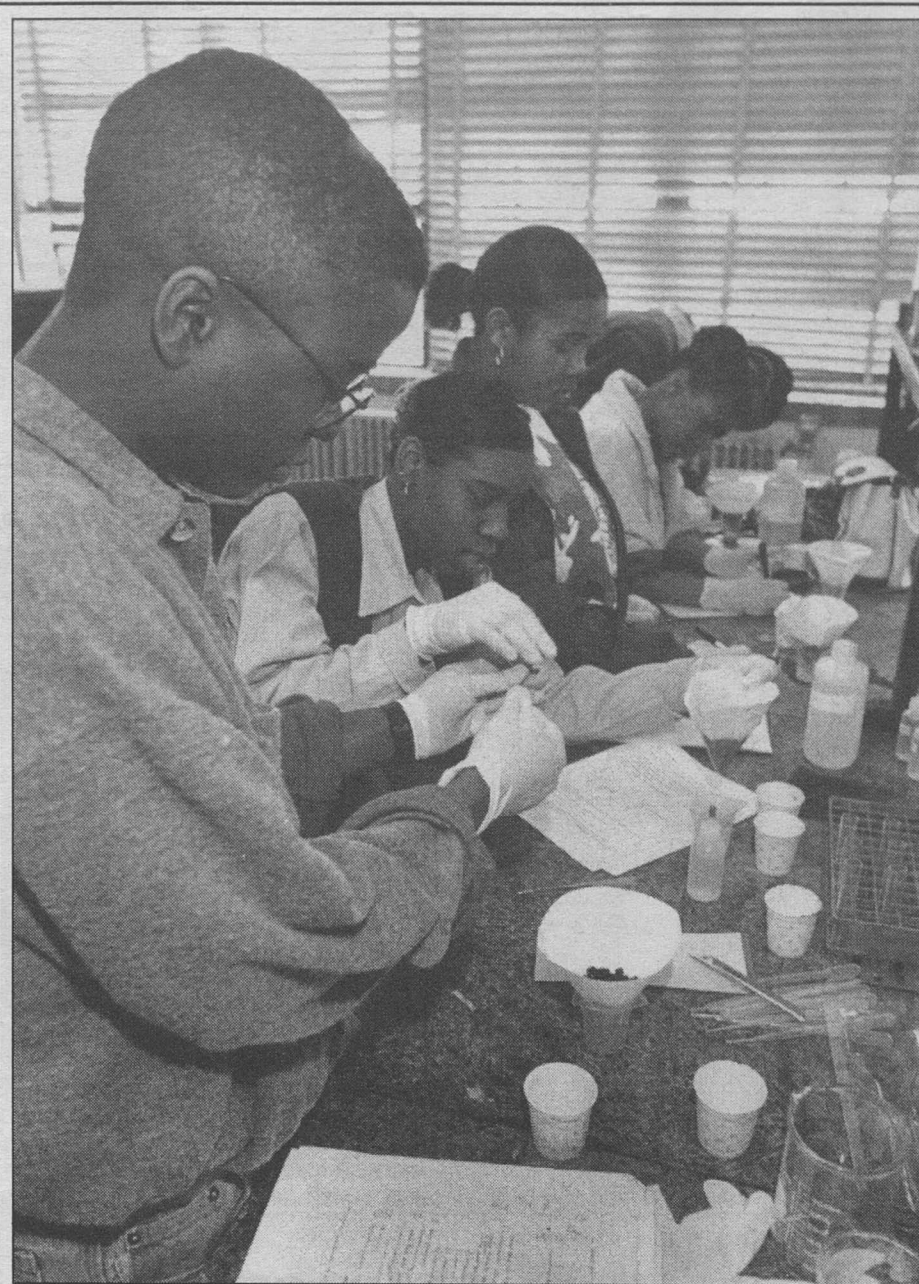
The conference will focus on issues

that relate to medical research in vulnerable or minority populations, such as women, blacks, children and psychiatric and AIDS patients.

Issues presented will be of interest to physicians, nurses, pharmacists, ethicists, healthcare administrators and medical students.

The \$150 registration fee includes a reception and some meals.

For more information or to register, call Barb Woodson at 454-8322.



Adrian Clarke, first-year medical student, helps a Vashon High School student conduct an evaluation of acid rain. Clarke and other medical students were at Vashon recently as part of the School of Medicine Young Scientist Program (YSP). Through summer laboratory internships, one-on-one tutoring and classroom visits, the YSP encourages economically disadvantaged high school students from the St. Louis City Public Schools to pursue careers in science.

Center will train healthcare professionals in prevention of sexually transmitted diseases

The School of Medicine will play a leading role in establishing the St. Louis STD/HIV Prevention Training Center, a regional center that will train healthcare professionals in detecting, treating and preventing sexually transmitted diseases.

The project is being funded by a five-year \$2.1 million grant from the national Centers for Disease Control. The grant was awarded to the St. Louis County Department of Health, in partnership with the School of Medicine and the City of St. Louis Department of Health and Hospitals.

The School of Medicine will receive \$1.48 million of the grant to establish and maintain training center operations, said Bradley P. Stoner, M.D., Ph.D., assistant professor of medicine and anthropology, and the project's medical director.

Only nine other U.S. sites were selected to offer regional training centers as part of a federal program to curb the rise in sexually transmitted diseases such as AIDS and syphilis. The St. Louis center will serve healthcare workers in Missouri, Iowa, Nebraska and Kansas. Training courses will begin in 1996.

The project also will involve the University of Missouri-St. Louis and St. Louis University.

Since 1992 more than 3,000 residents of St. Louis city and county have contracted syphilis. As a result, 59 babies in the city and county have been born with syphilis.

"This is an outstanding opportunity for Washington University faculty to serve as experts in STD/HIV training," Stoner said. "It certainly raises the visibility of the School of Medicine and the St. Louis area as an important na-

tional site for STD training and research. We hope that the center serves to raise awareness of the importance of STDs as a major public health threat."

Record

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Washington
WASHINGTON UNIVERSITY IN ST. LOUIS

Washington People

Klahr seeks to halt kidney disease progression

In the academic medical community, Saulo Klahr, M.D., is known as one of the world's most accomplished kidney disease researchers. But when he visits friends and family in his native Colombia, South America, he is known simply as David's brother. David is one of Colombia's leading architects.

The second billing hardly seems fair, considering that Klahr's lifelong interest in medicine comes from his family; his older brother and two cousins were physicians. "I never thought I would do anything else but medicine," said Klahr, the John E. and Adaline Simon Professor and vice chair of the Department of Internal Medicine and physician-in-chief at the Jewish Hospital of St. Louis.

Klahr's research focuses on understanding how disease affects the kidneys, organs that hold the critical responsibility of maintaining proper chemical balances in the body. Twenty-four hours a day, these organs keep water and salt balance steady and remove waste products generated from the digestion of food.

"He has made seminal contributions to our understanding of how disease affects kidney function and how kidney disease progresses," said Richard Glasscock, M.D., chair of the Department of Medicine at the University of Kentucky School of Medicine and a fellow kidney researcher.

Klahr's independent research began in Colombia in the mid 1960s with a groundbreaking study on the effects of chronic protein malnutrition on kidney function. Still considered one of the best studies on this topic, it showed that kidney function is markedly decreased in people who are chronically malnourished. The study established him as one of the first to recognize the important role of nutrition in normal kidney function. He later built on this work to examine diet's effect on the progression of kidney disease.

Klahr joined the Washington University faculty in 1966 as an assistant professor of medicine. Since then, he has explored the underlying characteristics of chronic kidney disease and the factors that lead to its inevitable progression. In animal models, Klahr's laboratory has studied the role of several factors in controlling progression, including dietary protein restriction and the use of lipid-lowering drugs. His research has laid the groundwork for clinical studies looking for ways to prevent progression in humans.

Those studies are beginning to yield answers; Klahr recently was chosen to head a major National Institutes of Health study examining the value of restricting dietary protein and controlling blood pressure to slow kidney disease progression. The study found that reducing blood pressure to levels below those currently recommended slows progression for patients who have high blood pressure and kidney disease characterized by loss of protein in the urine.

Klahr also is known for his important work on the effects of obstruction of the urinary tract on kidney function and structure. He became interested in the topic almost by accident in the early 1970s when Neal Bricker, M.D., then director of the Department of Internal Medicine's renal division, asked Klahr to help write a textbook chapter about obstruction. Soon after the book was published in 1971, Bricker left St. Louis to become chair of medicine at Albert Einstein College of Medicine in New York, and Klahr took his place as division director.

"I started getting a lot of phone calls from physicians about treating urinary tract obstruction. But we had not done any research in this area. We just reviewed the literature and wrote a good chapter about it. It wasn't my expertise." The calls raised his interest. More than 20 years later, his is one of the premier laboratories looking at the effects of urinary tract obstruction on the kidney.

Obstruction of the urinary tract transiently increases pressure inside the kidney. "We are trying to understand how that increased pressure is transformed into a series of biochemical events that lead to organ damage and loss of kidney function," Klahr explained. His laboratory has identified several of the inflammatory cells and substances involved in causing renal damage. The work is nearing the therapeutic stage. "We think that certain drugs

can interrupt this cycle and prevent or slow the progression of damage. In another couple of years, we may be ready to start looking at therapeutic interventions in patients," Klahr said.

Luis Reuss, M.D., chair of the Department of Physiology and Biophysics at the University of Texas Medical Branch in Galveston, said Klahr has set himself apart from others in his field by studying so many topics in such great depth. "It's very unusual to find someone who has excelled in all levels of research — from pure basic research to clinical application. He's been very successful at that," said Reuss, a longtime friend of Klahr's and a former faculty member of Washington University.

From South America to St. Louis

Klahr was born and raised in Colombia. His parents, of Austro-Hungarian descent, settled there after living in

mendous impact on the renal division and built it into one of the strongest in the country," said Aubrey R. Morrison, M.B., B.S., professor of medicine and of molecular biology and pharmacology. Morrison trained in Klahr's lab as a fellow in the mid-1970s.

In 1991, Klahr took on heavier administrative duties when he became co-chief of the Department of Internal Medicine at the School of Medicine and physician-in-chief at Jewish Hospital. At Jewish, he is responsible for patient care activities, medical education and medical research in the hospital's Department of Medicine.

"His leadership has been instrumental in the ongoing development of medical specialties centered at Jewish Hospital," said Wayne Lerner, D.P.H., president of Jewish Hospital. "He played a major role in the recent establishment of the Division of Geriatrics and Gerontology at Jewish Hospital, and he has led the charge to move forward on the research front

— one of the areas that makes Jewish Hospital a leader in the national and international medical community."

Spreading the word

Klahr also has donated considerable effort to supporting the cause of kidney disease, both nationally and locally. For 15 years he has served at the national level of the National Kidney Foundation, and as its president helped establish several new research programs. As secretary treasurer for three years and subsequently as president of the American Society of Nephrology, he helped to shape the scientific programs of this organization. He recently was appointed to serve on an NIH advisory council that advises the U.S. Secretary of Health and Human Services about the study and treatment of kidney disease and diabetes.

Over the years, Klahr has had a hand in teaching

at several levels. He strongly believes in supporting the Medical Center's role in training future scientists and clinicians, colleagues said. On a more personal basis, he has trained many researchers in his own laboratory who have gone on to successful careers. "He was very supportive and very accessible, always willing to look at interesting data — and even uninteresting data," said Morrison of his experience in Klahr's lab. "He has a tremendous knowledge of the literature in all areas of his field, and that made him quite a stimulating person to work with."

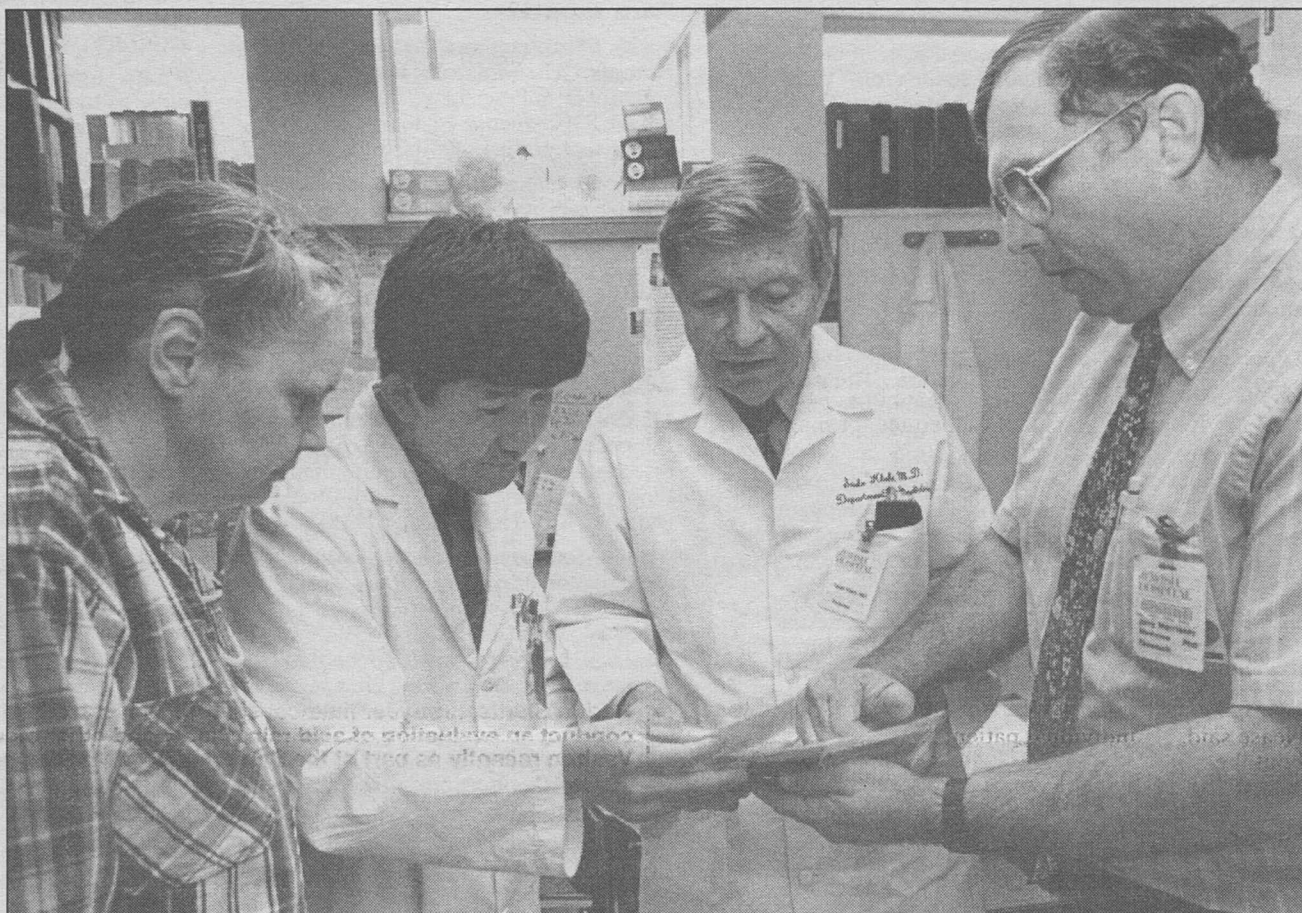
Klahr also has edited several textbooks, two of which have been translated into Russian. He co-edited a major textbook on kidney disease, called "Principles and Practice of Nephrology," now in its second edition. "Saulo has a reputation among the writing community as being the only author who consistently can be counted on to deliver a manuscript on time," Glasscock said. "And when he submits a manuscript, it's perfect. I don't know how he does it." In addition, he is considered an excellent lecturer and speaks about kidney disease frequently all over the world.

Klahr's pleasant personality has won him many friends over the years, said Shaul Massry, M.D., Bernard J. Hanley professor of medicine at the University of Southern California in Los Angeles, also a kidney disease specialist. He describes Klahr as a humanist. "By that I mean that he is a kind, compassionate person who sees the needs of others beyond his own needs."

The years also have brought more challenges, more time at his desk and less time for leisure, Klahr said. But outside of work, he enjoys reading — particularly books by Colombian author and Nobel Laureate Gabriel Garcia Marquez. He also follows baseball and was converted into a college basketball fanatic by his two sons, who are both lawyers. He has been married to St. Louis native Carol De Clue Klahr since 1965.

During his career, Klahr has witnessed significant advancements in the treatment for chronic kidney disease. The introduction of dialysis and kidney transplantation has significantly increased the life expectancies for end-stage patients over the past few decades. He said he looks forward to continuing the search for better approaches in the years to come. "We have made a lot of progress, but these are still treatments, not cures. We haven't stopped the disease. So there is still a lot of work to do."

— Juli Leistner



Left to right, Ruth McCracken, research technician at the Jewish Hospital of St. Louis; Shigeto Ishidoya, M.D., research fellow in medicine; Saulo Klahr, M.D.; and Jerry Morrissey, Ph.D., research professor of medicine, examine changes that occur in a DNA repair model of a urinary tract obstruction.

"We haven't stopped the disease. So there is still a lot of work to do."

Palestine and Poland. He attended medical school at the Universidad Nacional de Colombia in Bogota and in 1958 graduated first in a class of 200. After an internship in Bogota, he took a research position at the Universidad del Valle School of Medicine in Cali, Colombia, to study liver metabolism.

Klahr got hooked on the idea of focusing on the kidney after attending a lecture series on kidney function. As a reward for graduating first in his class, Klahr had received a two-year scholarship to study abroad. After a two-year residency at the medical school in Cali, he decided to use this scholarship to study kidney disease.

A series of accidents led him to St. Louis. At the medical school library in Cali, he found an American Heart Association brochure that listed training programs in cardiology and nephrology, the study of the kidney.

"One of the places listed was Washington University. So I wrote to Dr. John Smith explaining that I was interested in nephrology training," Klahr recalled. "Obviously, I didn't read the brochure very carefully; Dr. Smith wrote back to me saying he appreciated my interest, but that he was the chief of cardiology." Thankfully, Smith put Klahr in touch with the right person, Bricker, who brought Klahr to St. Louis as a renal fellow in 1961. Bricker, whom Klahr calls a mentor, is considered a pioneer in kidney research for his early studies explaining the nature of chronic kidney disease.

Building foundations

Klahr took over Bricker's role as division director in 1972. At the time, the division had exactly two faculty members: Klahr and Eduardo Slatopolsky, M.D., now a professor of medicine. Klahr successfully recruited new faculty and built a large endowment. "He made a tre-

Calendar

April 27-May 6



Exhibitions

"Master of Fine Arts II." School of Art graduate thesis show. Opening reception: 5-7 p.m. April 28. Exhibit continues through May 7. Gallery of Art, upper gallery, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays; and 1-5 p.m. weekends. 935-5490.

"Centennial of the First Ph.D. From Washington University." An exhibit of books, photographs and manuscripts commemorating the University's first Ph.D., granted to A. Isabel Mulford in 1895. Through May 26. Biology Library, Room 200 Life Sciences Bldg. Hours: 8:30 a.m.-5 p.m. weekdays. 935-5405.

"In-prints by and About Women From Three Collections in St. Louis." Opening reception: 5-7 p.m. April 27. Through July 21. Exhibit and reception in conjunction with the "Women Writers in Pre-revolutionary France" conference held April 27-30. Olin Library, Special Collections, level five. 935-5495.



Films

All Filmboard movies cost \$3 and are shown in Room 100 Brown Hall. For Filmboard Hotline, call 935-5983.

Thursday, April 27

7 and 9 p.m. Filmboard Classic Series. "Sullivan's Travels" (1941, B&W), written and directed by Preston Sturges; based on a novel by Sinclair Beckstein.

Friday, April 28

7 and 9:30 p.m. Filmboard Feature Series. "Priscilla, Queen of the Desert." (Also April 29, same times, and April 30 at 7 p.m.)

Midnight. Filmboard Midnight Series. "Animal House." (Also April 29, same time, and April 30 at 9:30 p.m.)



Lectures

Thursday, April 27

11:15 a.m. Mental health seminar. "Social Networks in Help-seeking and Service Utilization Among Mentally Disordered Persons," Bernice Pescosolido, assoc. prof., Dept. of

Calendar guidelines

Events sponsored by the University — its departments, schools, centers, organizations and its recognized student organizations — are published in the Calendar. All events are free and open to the public, unless otherwise noted.

Calendar submissions should state time, date, place, sponsor, title of event, name of speaker(s) and affiliation, and admission cost. Quality promotional photographs with descriptions are welcome. Send items to Judy Ruhland at Box 1070 (or via fax: 935-4259). Submission forms are available by calling 935-4926.

The deadline for all entries is noon Tuesday one week prior to publication. Late entries will not be printed. The Record is printed every Thursday during the school year, except holidays, and monthly during the summer. If you are uncertain about a deadline, holiday schedule, or any other information, please call 935-4926.

Sociology, and principal investigator, Program for Services Research on Severe Mental Illness, Indiana U., Bloomington. Second Floor Conference Room, Administrative Bldg., 1130 S. Hampton Ave. 935-5741.

Noon. Genetics seminar. "Molecular Genetic Approaches to the Etiology of Alzheimer's Disease," Rudolph Tanzi, asst. prof., Dept. of Neurology, Massachusetts General Hospital. Cori Aud., 4565 McKinley Ave. 362-2736.

1:10 p.m. Social work lecture. "American Indian Families: Continuity and Change in the 20th Century," Gary Sandefur, prof., Dept. of Sociology, and assoc. vice chancellor for academic affairs, U. of Wisconsin, Madison. Brown Hall Lounge. 935-6600.

4 p.m. Biology and biomedical sciences seminar. "Differential Role of bcl-2 and bcl-x in Lymphocyte Survival," Craig B. Thompson, Dept. of Medicine, U. of Chicago. Cori Aud., 4565 McKinley Ave. 362-9072.

4 p.m. Earth and planetary sciences colloquium. "Low Temperature Igneous Evolution of the Galilean Satellites," Jeffrey S. Kargel, geologist, U.S. Geological Survey, Flagstaff, Ariz. Room 362 McDonnell Hall. 935-5610.

4 p.m. Oncology lecture. The Julia Hudson Freund Memorial Lecture. "Human Cytomegalovirus Immediate Early Proteins Block Apoptosis and Contribute to Oncogenic Transformation of Cultured Cells," Thomas E. Shenk, prof. of molecular biology, Princeton U., and investigator, Howard Hughes Medical Institute. Moore Aud., 660 S. Euclid Ave.

4 p.m. Romance languages lecture. "Semiotique de L'espace Romanesque: Bardamu au Fast-food," Henri Mitterand, prof. of French at Columbia U., New York, will kick off the conference "Women Writers in Pre-revolutionary France," to be held through April 30. (See Miscellany.) The lecture, in French, deals with the work of modern novelist Céline. Women's Bldg. Lounge. 935-5175.

4:15 p.m. Physical therapy lecture. The Sixth Annual Steven J. Rose Lecture. "Modeling Critical Interactions," David E. Krebs, prof., Program in Physical Therapy, Massachusetts General Hospital. Wohl Hospital Bldg. Aud., 4960 Children's Place. 286-1400.

Friday, April 28

9:15 a.m. Pediatric Grand Rounds. "Flexortendon Healing," Richard H. Gelberman, prof. and chair, Dept. of Orthopaedic Surgery. Wohl Hospital Bldg. Aud., 4960 Children's Place. 362-3363.

12:15 p.m. Dept. of Medicine lecture. The Alpha Omega Alpha Lecture. "The Core Values Are Under Siege," Harvey R. Colten, Harriet B. Spoehrer Professor of molecular microbiology and chair, Dept. of Pediatrics. Wohl Hospital Bldg. Aud., 4960 Children's Place.

1 p.m. Solid-state engineering and applied physics seminar. "Magnetoresistive Head Modeling," Mihir Sathe, graduate student, Dept. of Electrical Engineering. Room 305 Bryan Hall. 935-5565.

4 p.m. Microbial pathogenesis seminar. "RNA-protein Interaction in Hepatitis B Virus Replication," Don Ganem, investigator, Howard Hughes Medical Institute, Dept. of Microbiology, U. of California, San Francisco. Cori Aud., 4565 McKinley Ave.

4 p.m. Music lecture. "Music and Lighthousekeeping: West Coast Jazz in the Early 1950s," Robert L. Hughes, doctoral candidate in musicology. Room B-8 Blewett Hall. 935-5581.

Saturday, April 29

9 a.m. Saturday Morning Neural Sciences Seminar. Growth Factors and Apoptosis Series. "Future Directions in Neurotrophin Research," William Snider, assoc. prof., Dept. of Neurology and Neurological Surgery. Erlanger Aud., McDonnell Medical Sciences Bldg.

Tuesday, May 2

9 a.m. Psychiatry lecture. Edwin F. Gildea Lecture. "Research Developments in the Treatment of Cocaine Dependence," Charles P. O'Brien, chief of psychiatry, Veterans Administration Medical Center, and prof. and vice chair of psychiatry, U. of Pennsylvania, Philadelphia. Clopton Aud., 4950 Children's Place. 362-7772.

12:10 p.m. Physical therapy seminar. "Fetal and Neonatal Movement Patterns," Robert Almli, assoc. prof., Program in Occupational Therapy. Classroom C Forest Park Bldg., 4444 Forest Park Blvd. 286-1427.

4 p.m. Diabetes research group seminar. "Clinical Trials in Diabetes," Julio Santiago, prof. and director, Division of Endocrinology/Metabolism, Dept. of Pediatrics. Pathology Library, Room 3723 West Bldg. 362-7435.

Wednesday, May 3

6:30 a.m. Anesthesiology Grand Rounds. "New Insights Into Mechanisms of Anesthetic Actions," Joseph Antognini, asst. prof. of anesthesiology, U. of California, Davis. Wohl Hospital Bldg. Aud., 4960 Children's Place. 362-4449.

8 a.m. Obstetrics and Gynecology Grand Rounds. "The Molecular Basis of Acute Fatty Liver in Pregnancy," John Isaacs, fellow, Reproductive Endocrinology Division. Clopton Aud., 4950 Children's Place.

4 p.m. Biochemistry and molecular biophysics seminar. "Molecular Structure of Human beta-Glucuronidase and Its Biomedical Implications," Sanjeev Jain, asst. prof., Dept. of Biochemistry and Molecular Biology, St. Louis U. School of Medicine. Cori Aud., 4565 McKinley Ave. 362-0261.

Thursday, May 4

11:15 a.m. Social work lecture. "Limited Dependent Variables," Mark A. Schnitzler, dissertation fellow in economics. Second Floor Conference Room, Administrative Bldg., 1130 S. Hampton Ave. 935-5741.

4 p.m. Molecular oncology seminar. "Modulation of p53-mediated G1 Arrest and Apoptosis," Michael Kastan, assoc. prof. of oncology, depts. of Molecular Biology and Genetics, Johns Hopkins U. School of Medicine, Baltimore. Third Floor Aud., St. Louis Children's Hospital. 362-9035.

Friday, May 5

Noon. Cell biology and physiology seminar. "Cell Biology of Prion Proteins," David Harris, asst. prof., Dept. of Cell Biology and Physiology. Cell Biology Library, Room 426 McDonnell Medical Sciences Bldg.

1 p.m. Solid-state engineering and applied physics seminar. "Capacitive Measurements of Exocytosis," D. Barnett, graduate student, Dept. of Electrical Engineering. Room 305 Bryan Hall. 935-5565.

4 p.m. Molecular microbiology seminar. "Isolation and Characterization of Yeast Mutants Defective in Nucleocytoplasmic Export of Messenger RNA," Charles N. Cole, prof., Dept. of Biochemistry, Dartmouth U. Room 775 McDonnell Medical Sciences Bldg. 362-7059.



Music

Thursday, April 27

8 p.m. Flute recital. Program: music of Béla Bartók, Aaron Copland and Heitor Villa-Lobos. Graham Chapel. 935-5581.

8:30 p.m. Electronic music concert. Features the electronic music class with Richard O'Donnell, director. Tietjens Hall. 935-5581.

Sunday, April 30

2:30 p.m. Fifth annual Chancellor's Concert. Performed by the symphony orchestra with Dan Presgrave, director. Program: Edvard Grieg's "Peer Gynt Suite No. 1," conducted by Elizabeth Macdonald; Max Bruch's "Concerto in G minor for Violin and Orchestra," Juliet Kurtzman, violin; and Antonín Dvořák's "Symphony No. 9 in E minor ('From the New World')." Saint Louis Art Museum Aud., 1 Fine Arts Drive, Forest Park. 935-5581.

7:30 p.m. University City Symphony Orchestra concert. Program: Felix Mendelssohn's "Piano Concerto in G minor," Annie Hsieh, piano; Sergei Prokofiev's "Peter and the Wolf," Jeanette Myers, narrator; and Antonín Dvořák's "Symphony No. 8 in G Major, op. 88." Graham Chapel. 935-5581.

Tuesday, May 2

7:30 p.m. New Music Circle concert. French pianist Roger Muraro performs "Vingt regards sur l'enfant Jesus." Co-sponsored by New Music Circle and Webster U. in association with the French Piano Institute. Graham Chapel. 935-5581.

Wednesday, May 3

8 p.m. Student recital. Program: music of Johann Sebastian Bach, W. A. Mozart, Franz Schubert, Gabriel Fauré, Béla Bartók, Vincent Persichetti and Alberto Ginastera. Performed by graduate student Karen Di Bella and undergraduates Lance Finney, Cheryl Gooden, Christopher Murriel, Lucy Tan and Mandy Weeks. Graham Chapel. 935-5581.

Friday, May 5

8 p.m. Opera performance. WU Opera, directed by Jolly Stewart, presents "The Mikado" by Gilbert and Sullivan. Performed by John Stewart, assoc. prof. and head, vocal music program, and students Joseph Consiglio and Jeanenne Lambert. (Also May 6, same time.) Umrath Hall Lounge. 935-5581.



Performances

Thursday, April 27

8 p.m. Performing Arts Dept. presents "One-act Plays," directed, acted and designed by students. (Also April 28 and 29, same time, and April 30 at 2 p.m.) Drama Studio, Room 208 Mallinckrodt Center. Cost: \$8 for the general public; and \$6 for senior citizens, WU faculty, staff and students. 935-6543.



Miscellany

Friday, April 28

11 a.m. Romance languages conference (cont.). "Women Writers in Pre-revolutionary France." Madeleine Lazard, The Sorbonne Nouvelle, Paris, will deliver the keynote lecture, "The Birth of Women's Autobiography — Marguerite de Valois' 'Mémoires'." (See Lectures for the 4 p.m. April 27 opening lecture.) Conference continues through April 30. Sponsored by the Dept. of Romance Languages and Literatures. Radisson Hotel, 7750 Carondelet Ave., Clayton. Cost: \$60. For more info. and to register, call 935-5180.

Saturday, April 29

9 a.m.-noon. Bookmaking workshop. "Illustrate a Book With Rubber Stamps." Room 104 Bixby Hall. Cost: \$35. 935-4643.

9 a.m.-4 p.m. Tyson Research Center family day. Includes crafts, nature walks, pond studies, cave tours and snake observations. Tyson Research Center, Eureka, Mo. For directions or more info., call 935-8430.

Monday, May 1

7 p.m. Office of Continuing Medical Education seminar series. "Internal Medicine Review." The topics are dermatology and general internal medicine. Steinberg Amphitheatre, Jewish Hospital. For credit info., call 362-6893.

Thursday, May 4

8:30 a.m.-5:30 p.m. Human studies conference. "Contemporary Issues in Human Research Subject Protection in Vulnerable and Minority Populations: Sharing the Burdens and Benefits of Research." Continues through May 5. Regal Riverfront Hotel, 200 S. Fourth St. For cost, credit and registration info., call 454-8322.

Friday, May 5

9 a.m.-noon. Paget's disease patient education meeting. "Get Answers to Your Questions About Paget's Disease," Louis Avioli, director of the Division of Bone and Mineral Diseases, and Michael Whyte, professor of medicine, and other national experts will answer patients questions. Ritz-Carlton Hotel, 100 Carondelet Plaza. Registration is requested. 454-8409 or 1-800-23-PAGET.

6 and 8:30 p.m. WU Association Travel Lecture Series. "The Sunny South of

France," Charles Hartman, documentary filmmaker. Graham Chapel. Cost: \$4.50. 935-5212.

Saturday, May 6

11:30 a.m. Woman's Club luncheon and program. "Estate Jewelry: Antique and Unique," Stacy Zeid, manager of precious jewelry, Neiman-Marcus. The Kaleidoscope Room, Neiman-Marcus, Plaza Frontenac. Open to Woman's Club members and their guests. Cost: \$13.35. Limited seating available. Call Pat at 862-6615 for reservations.

Major conference explores women writers in pre-revolutionary France

More than 140 scholars from Europe, Africa, the United States and Canada are expected to attend a major conference on "Women Writers in Pre-revolutionary France" to be held April 27-30 at the Radisson Hotel, 7750 Carondelet Ave., in Clayton.

The main themes to be explored at the conference are how early modern feminists confronted prejudice; the education of women; women's right to study; mother/daughter relations; the genre to which women applied their talents, such as autobiography, memoirs and fairy tales; as well as women and religion. The scholars will present papers both in English and French.

Madeleine Lazard, Ph.D., professor emerita at The Sorbonne Nouvelle in Paris, will deliver the keynote lecture on "The Birth of Women's Autobiography — Marguerite de Valois' 'Mémoires'" at 11 a.m. in the Radisson's London Room. Lazard also is honorary president of the Society of 16th-Century Studies in France. She is best known for her work on such writers as François Rabelais and Michel de Montaigne, and her 1985 book titled "Literary Images of Women During the Renaissance," published in Paris by

the Presses Universitaires de France (University Presses of France).

In conjunction with the conference, Olin Library's Special Collections has organized an exhibit titled "An Exhibit of Books by and About Women." The exhibit opens at 5 p.m. Thursday, April 27, in Special Collections, which is located on the fifth floor of Olin Library. A reception, sponsored by Olin Library, will be held simultaneously with the exhibit opening. The exhibit continues through July 21.

The conference, which costs \$60, includes a banquet dinner, musical entertainment and a reception. Individuals may attend the conference for one day at a cost of \$10, or four days at a cost of \$20, excluding meals, and can register at the site. The conference is sponsored by the Department of Romance Languages and Literatures, the College of Arts and Sciences and the French Consulate's office in Chicago. Colette H. Winn, Ph.D., associate professor of Romance languages and literatures, serves as organizer and chair of the conference.

For more information about the conference, call the Department of Romance Languages and Literatures at 935-5180.

Fashion students premiere selected collections at Galleria runway show

"The Fashion Show," a gala premiere of the finest creations of Washington University fashion design students, begins with a 7 p.m. dinner buffet and cocktails on Sunday, April 30, followed by an 8 p.m. runway show and a 9 p.m. dessert bar reception with the designers. The event will be held in the Garden Court of the Saint Louis Galleria, located at the intersection of Clayton Road and Brentwood Boulevard.

"This show is a rare opportunity for St. Louisans to see clothes similar to what is shown on the runways of Paris and Milan, but in a looser, hipper format," said Leigh Singleton, associate professor of art and director of the University's fashion design program.

Guests not only will see the latest designs, they also will be able to meet the designers, try on the clothes, and, if interested, purchase items.

Design students will be on hand to discuss their work at small boutiques on the second floor of the Garden Court. The boutiques were custom designed for the show by another group of art students who are in the "3-D Design" class taught by Alison Crocetta, a lecturer in the school's sculpture program.

The event promises a lot more than fashion alone. It is a showcase for unusual choreography and staging. "We are presenting the latest in music, the latest in lighting, the latest in attitude," said Singleton.

"The Fashion Show" features selected collections from 10 juniors and five seniors, a number of whom already have received national and local recognition. Katrina Johnson, a senior in fashion design, competed in the 1994 annual Air France young designers fashion show in Paris, and junior Linda Ott won the Lord & Taylor dress competition. Designers Naomi Martinez and Mary Alma Allen were awarded the Kellwood Scholarship, a prize given to juniors for overall excellence in fashion design. All will present their collections.

Singleton points out that his students are not constrained by the trends and rules of the fashion industry, and thus enjoy the freedom to create designs that range from irreverently flamboyant to classically practical.

"These student designers are the Evil Knievels of the runways," said Lynn Sanders Young, marketing director for Saint Louis Galleria.

After the show, select design prizes will be awarded by local companies, including the Kellwood Corp., an international clothing marketer; the Fashion Group International of St. Louis; and Dominic Michael hair salon.

Tickets for the show are \$45, which includes a dinner catered by Café Provençale, cocktails, general seating and music/dancing.

Tickets will be sold at the door, but advance registration is preferred. For tickets or more information, call 935-6515.

University song contest winners revealed at Chancellor's Concert

The winners of the 1994-95 Washington University Song Contest will be announced during the fifth annual Chancellor's Concert presented by the Washington University Symphony Orchestra. The concert, which is free and open to the public, will be held at 2:30 p.m. Sunday, April 30, in the Saint Louis Art Museum Auditorium in Forest Park.

Late last year the University's Chamber Choir launched the contest for a rousing "fight song" and a more sentimental song with original lyrics and melodies. The winning songs will not replace the alma mater, said choir director John Stewart, associate professor and head of the vocal music program in the Department of Music in Arts and Sciences. The new songs are part of an effort to update the University's song book, which was put together in 1922.

The contest was open to alumni and current students. The Chamber Choir will premiere the winning songs at the concert. The first-place winner or winning team in each category will receive \$250 while the runners-up in each category will receive \$150.

The judges for the competition were Stewart; David Truman, a third-year law

student and president of the choir; Matthew Cooper, assistant director of the choir, who received a bachelor's degree in English, with a minor in music, last year; Dolores Pesce, Ph.D., associate professor of music; and John Lawless, who received a bachelor's degree in music in 1964 and is a member of the National Council for the Faculty of Arts and Sciences.

Dan Presgrave, the symphony orchestra's director, has selected a program of well-known orchestral works to honor Chancellor William H. Danforth and his wife, Elizabeth. After 24 years of service, Danforth will retire June 30. The program includes Edvard Grieg's "Peer Gynt Suite, No. 1," with its popular "Anitra's Dance" and "In the Hall of the Mountain King." Elizabeth Macdonald, director of strings in the music department, will conduct the piece.

The program also will feature violinist Juliet Kurtzman performing Max Bruch's "Concerto in G minor for Violin and Orchestra."

The orchestra closes the program with Antonin Dvořák's "Symphony No. 9 in E minor."

For more information about the concert, call 935-5581.

Service program boosts morale — from page 1

nication skills, but the training also provided me an opportunity to meet other staff members of Washington University. I think the class has boosted the work morale within the University."

During the first session, "The Service Context," participants learn how to understand perceptions and evaluate how they are perceived as service providers. The two "Communication Skills" sessions teach listening and questioning skills, as well as characteristics of trained listeners, non-verbal communication, effective call management, assertive vs. aggressive behavior and how to create a win-win situation. In the "Managing Your Communications" segment, participants are taught partnering solutions, how to use descriptive language, how thinking styles affect interaction and how to keep the interaction in control. In the final session, trainers teach special techniques for handling difficult situations, as well as action planning for success.

"I found this training program to be very rewarding in a professional and

personal sense," said Gerry Manasco, an accountant in Accounting Services. "I hope to see more programs like this one coming to the University. It was nice to interact with some of the campus employees that you talk to on the phone but never see a face to go with the voice."

Building on the success of the program, Lee Weeks, chief financial officer and controller, is offering an Internal Customer Service training program for managers and supervisors who have completed "Service for Success."

In addition, "Service for Success" program participants are invited to brown bag lunches for follow-up discussion of some of the issues addressed in the training sessions.

Upcoming "Service for Success" sessions will be held from 8:45 a.m. to noon May 4, 5, 8, 9 and 10, and June 14, 15, 16, 19 and 20 at West Campus. For more information about "Service for Success" or the Internal Customer Service training programs, or to sign up, call Tena Combs at 935-4492.

— Susannah Webb

Sports

Compiled by Mike Wolf, director, and David Moessner, asst. director, sports information.

Track teams sweep UAA championships

Washington University's women's track and field team successfully defended its University Athletic Association (UAA) outdoor championship and the men earned their fifth title in eight years this past weekend in Chicago.

Fueled by a pair of NCAA Division III qualifying marks by senior Renee Foster, Peoria Heights, Ill., the women's squad posted a narrow 120-110-109 win over runners-up Brandeis University and Emory University. Foster won both the 200- and 400-meter dashes and helped the Bears to a pair of relay victories. Her :25.84 time in the 200-meter dash broke her own school record and earned her a provisional ticket to next month's national meet.

The men, led by senior Antone Meaux, Cincinnati, stormed to 157 points — 42 more than second-place Case Western Reserve University. Meaux, who won both the 100- and 200-meter dashes and finished second in the long jump, concluded his career as a nine-time individual UAA champion and a 22-time all-UAA honoree.

This week: 10 a.m. Friday-Saturday, April 28-29, Drake Relays, Des Moines, Iowa

Women's tennis swings to second-place finish; men tie for third

Enduring rain-soaked conditions, the women's tennis team placed a strong second in the Eighth Annual UAA Championships, held last weekend in Atlanta. The Bears toppled New York University (9-0) in the first round and blistered second-seeded Brandeis (5-1) to reach the finals against seven-time defending champion Emory. The Eagles then flew past the Bears 5-1 in the championship

round. WU's sole title win came at No. 3 doubles where sophomore Sara Roberts, Billings, Mont., and first-year student Gloria Abramson, Calabasas, Calif., combined for a 9-8 (7-5) victory.

The men's team wrapped up its tennis season by finishing in a third-place tie. The Bears won their opening match by a 5-2 count over Brandeis. In the semifinal round, however, WU was upset by the University of Chicago 4-2. The Bears lost four of the five singles matches after they had gained the doubles point with victories by their No. 1 and No. 3 doubles teams. Due to inclement weather, the Bears' third-place match vs. the University of Rochester was not played.

Final record: women — 14-5 in spring (19-5 overall); men — 10-5

This week: season complete

Baseball team wins pair

Backed by some outstanding pitching and defense, the Bears gained their first shutout of the season 1-0 over McKendree College. Freshman southpaw Thor Larsen, Nevada City, Calif., pitched seven and two-thirds innings, striking out nine and allowing just five hits. Two days later vs. Maryville University, the Bears belted out a season-high 21 hits and won an easy 21-2 decision. Junior catcher Andrew Denlow, Evanston, Ill., upped his team-leading batting average to .446 with a four-for-four performance at the plate.

The Bears wrap up their regular season this week.

Current record: 22-13 (5-1 UAA co-champions)

This week: 2 p.m. Tuesday, April 25, at Principia College (2), Elsah, Ill.; 7 p.m. Wednesday, April 26, at Southeast Missouri State University, Cape Girardeau, Mo.

Wiltenburg named associate dean of University College, wins award

Robert Wiltenburg, Ph.D., has been named associate dean of University College and director of Summer School, announced Wayne Fields, Ph.D., dean of University College and professor of English.

Wiltenburg currently serves as assistant dean of the College of Arts and Sciences, director of the Expository Writing Program and as an adjunct associate professor of English. He recently was honored with the 1994 Governor's



Robert Wiltenburg

Award for Excellence in Teaching, which is administered through the Coordinating Board for Higher Education. The award is presented to those individuals who have made outstanding contributions to the quality of education at Missouri's colleges and universities.

"Bob has done an outstanding job over the last several years teaching, overseeing the University's freshman composition program and working in Arts and Sciences as an assistant dean," Fields said. "He will continue to use his links with the Department of English and the College of Arts and Sciences to strengthen the ways in which Summer School serves the needs of students. I'm grateful for his administrative abilities and good sense, and I'm delighted with the appointment."

As Summer School director Wiltenburg is looking for ways to build participation among high school students, and to more strongly connect high school scholars' programs with recruiting efforts. "We want to make Summer School more vivid, more attractive to high school students," Wiltenburg said. Currently many local high school students are taking individual classes, but Wiltenburg said he would like to draw more students from beyond the St. Louis area, and encourage more to take advantage of the opportunity to live on campus during summer. In addition Wiltenburg,

working with other University College deans, oversees the University's general outreach program.

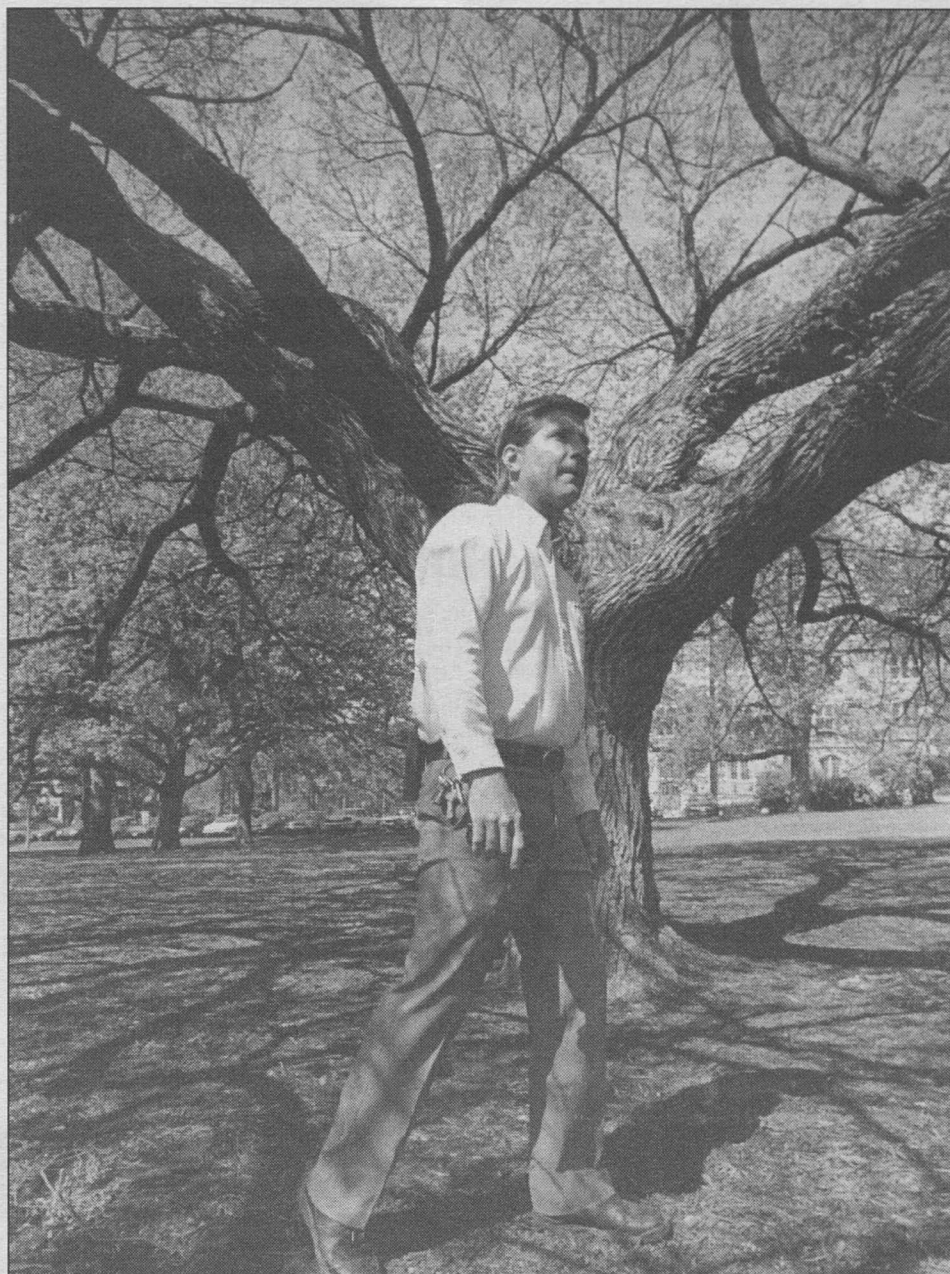
With his new responsibilities, Wiltenburg will step down as director of the Expository Writing Program, a position he has held since 1982. He will be succeeded July 1 by Amy Pawl, assistant professor of English, from Davidson College in Davidson, N.C.

Wiltenburg has continued to teach two courses a year while serving as an administrator, and recently was one of about 50 teachers in Missouri honored for teaching excellence. Each Missouri university or college is responsible for selecting its teacher awardee, but the Coordinating Board for Higher Education recommends certain standards for selection, including evidence of: effective teaching at the undergraduate level; effective advising of undergraduate students; service to the college community; commitment to high standards of excellence; and success in nurturing student achievement and of the impact on the academic and personal lives of students.

In the fall Wiltenburg teaches a required seminar for graduate teaching assistants, titled "The Teaching of Writing."

Mary Jo Colagiovanni, a graduate student in English who took the training class, said Wiltenburg valued the individuality and creativity of each student. "There were a lot of students with different teaching approaches," she explained. "He (Wiltenburg) could have been rigid and restrictive. It could have been pandemonium. But he opened the room for discussion. He allowed the various strengths of each student to come through without undermining his own authority or other students' confidence." The experience allowed students to draw on each others' strengths, integrate them and embrace varied approaches.

A scholar in 17th-century English Renaissance literature, Wiltenburg is the author of a book titled "Ben Jonson and Self-love: The Subtlest Maze of All," and numerous other articles in the field. Over the years he has taught a variety of courses, including Shakespeare, Milton and 17th-century English literature.



Horticulturist Paul Norman is making a detailed inventory of trees on campus. This 80-year-old Scotch Elm is one of his favorites.

Location considered key to trees' health — from page 1

Department of Biology have investigated the possibility of cloning the tree to duplicate any disease-resistant traits. This spring the biologists are attempting to propagate with cuttings from the tree. If the project is successful, some of the offspring will be planted on campus.

Meanwhile, the elm is being nursed with a disease preventative that seems to be working. When one of its lower limbs started to split, Norman strung a cable as a kind of sling. And when water, leaves and other debris began piling up at the joint, he made the difficult decision to remove the limb before it got infected.

Wherever possible, trees are replaced with the same species, or one that would thrive in the location. Like real estate, the key to a tree's value and longevity is its location. Unfortunately, a busy university campus in a landlocked urban setting is not the healthiest location for a tree. On campus, the enemies are not cars, but foot traffic and narrow root zones along pathways and beside buildings.

A prime example of a tree that could not survive the combination was a green ash that grew in the quadrangle along an aisle used during Commencement. Despite a special feeding program, the roots were too shallow and years of Commencement processions had caused the ash to disease on one side. The disease eventually spread throughout the tree. The ash was replaced with a red maple with a root base that is more conducive to that location.

Location is the most important, but not the only consideration. Norman has to weigh dozens of other factors when deciding what kind of tree to plant where, and how to maintain it. The sweet gum trees planted years ago along the pathway east of the athletic fields are hailed for their beautiful fall foliage. But the golf ball-sized balls they drop can turn ankles and are a headache for maintenance crews. Female ginkgo trees, though beautiful with their fan-shaped leaves and yellow fruit, emit a foul odor like rancid butter. Locust trees are good, energy-efficient neighbors for buildings because their open branches and small leaves offer filtered shade in the summer

and warming sun in the winter. The lower limbs of trees in the quad must be trimmed carefully so as not to block the line of sight during Commencement exercises. An elm in front of Graham Chapel is in a fire lane and also must be pruned often. Recently, Norman was called to remove a branch of the Scotch Elm near Brown Hall when a tall professor bumped his head.

"People call and say there's a tree blocking a light pole. I say there's a light pole blocking my tree. They say move your tree. I say move your light pole," Norman said. "I get called for everything that falls outside of a building. Snow, ice,

wind, dogs on campus, they call me."

Obviously, Norman, who has a bachelor's degree in forestry from the University of Missouri-Columbia, does not maintain the entire campus single-handedly. The University

contracts with Top Care Inc., a lawn care service that also maintains the Missouri Botanical Garden, to keep the campus looking beautiful. In addition to planting flowers, trimming trees and mowing grass, that also mean applying chemicals to ward off pests, which Norman describes as "anything from a broadleaf weed to a bug on a tree. But," he added, "this is done on a limited basis because proper cultural practices make healthy plants that will naturally resist pests."

Right now, the campus is at its most beautiful. Daffodils and tulips are in bloom, as are pink, white and red crab apple trees. People go out of their way for a stroll down ginkgo alley and Oak Allée east of Olin Library. The 150-plus-year-old white oaks east of Brookings Hall are thriving. The bulbous trunk of a box elder nearby is home to a busy woodpecker. At this time of year, the trees draw students, faculty and staff like magnets. Individuals read and nap in their shade; whole classes sit in circles around their trunks.

"People get cabin fever in the winter and can't wait to get outside in the spring," Norman said. "One of the reasons students come here is the beauty of Washington University's campus. The green space is very important to students, faculty and staff who appreciate the beautiful work environment. We work hard to maintain that."

— Susannah Webb

Campus Watch

The following criminal incidents were reported to the University Police Department April 17-23. Readers with information that could assist the investigation of these incidents are urged to call 935-5555. This release is provided as a public service to promote safety awareness on campus.

April 17

12:20 p.m. — A student reported that a door in Hitzeman Residence Hall had been kicked in sometime between 9 p.m. and midnight April 15.

5:35 p.m. — A facade for Thurtene Carnival fell, injuring a student, who was treated at Jewish Hospital.

April 18

10:30 a.m. — A portable compact disc player belonging to a staff member was reported stolen from a desk drawer in Bowles Laboratory, Lopata Hall, sometime between 8:30 and 10 a.m. April 5.

12:41 p.m. — High winds shattered a glass door and window at Eliot Residence Hall.

2:29 p.m. — University Police escorted a trespasser from Givens Hall.

2:30 p.m. — A board blown loose from a facade at Thurtene Carnival injured a student, who was treated at Jewish Hospital.

April 19

6 a.m. — High winds broke a large tree limb, causing it to fall on a car parked in the lot on the south side of Brown Hall.

10:19 a.m. — A School of Law employee turned in a license plate that was found in the Millbrook Parking Garage. University Police returned the plate to the owner, a faculty member.

April 20

3:22 p.m. — A staff member reported that a vehicle had been scratched while parked in the Millbrook Parking Garage.

5:43 p.m. — University Police escorted two solicitors from Shepley Residence Hall. The

subjects, who were not affiliated with the University, were selling religious books.

April 21

12:41 a.m. — A student reported seeing two males steal a half barrel of beer from the sidewalk outside of the Umrathskellar.

1:52 a.m. — A student who reported paint in the eyes was treated at Thurtene Carnival.

11:35 a.m. — A student was cut in the leg by a nail protruding from a board being unloaded at Thurtene Carnival. The student was treated at the scene and conveyed to Jewish Hospital.

1:55 p.m. — A staff member reported license tabs stolen from a vehicle parked in front of Givens Hall.

A notebook computer and case were reported stolen from an office in Mudd Law Building sometime between March 21 and April 11.

April 22

1:51 a.m. — University Police responded to a report of a car being driven in the South 40 Swamp. Police stopped the vehicle and identified a student, who said he had been drinking. The incident will be referred to the Board of Judicial Administrators and Grounds Services to assess property damage.

11:30 p.m. — A student was treated at Thurtene Carnival after being struck by a portable toilet that several subjects reportedly pushed over.

In addition to the incidents listed above, University Police responded to one report of vandalism, one report of stealing and one report of telephone harassment.

Introducing new faculty members

Medical Campus:

Douglas R. Adkins, M.D., assistant professor of medicine, comes from St. Louis University, where he held the same position. He also was director of the Allogeneic Bone Marrow Transplant Program there. Adkins' primary research interests include approaches to shorten the time of decreased white blood cell production in bone marrow transplant recipients and methods to stimulate the cellular immune system toward malignant cells after bone marrow transplantation. He received both a bachelor's degree in biology in 1982 and a medical degree in 1986 from the Wright State University School of Medicine in Dayton, Ohio.

Bradley P. Stoner, M.D., Ph.D., assistant professor of medicine and of anthropology, comes from the University of Washington in Seattle, where he was an acting instructor in infectious diseases and a research associate in anthropology. His research interests focus on the demographics and behavioral correlates of sexually transmitted diseases. Stoner received a bachelor's degree in biological anthropology in 1981 from Harvard University and a master's degree in medical anthropology in 1984 from McGill University in Montreal. He received a medical degree in 1987 from the Indiana University School of Medicine in Indianapolis and a doctorate in anthropology in 1989 from Indiana University in Bloomington.

Architecture school honors five alumni

The School of Architecture recently held its second annual Distinguished Alumni Awards Dinner in the Central West End's Mahler Ballroom. The alumni recipients are: Anthony Abbate, M.Arch. '82, founder of Anthony Abbate Architecture in Fort Lauderdale, Fla.; Rex Becker, F.A.I.A., B.Arch. '34, M.Arch. '35, a retired architect; Joseph Bilello, M.Arch. '76, who served as director of education programs for the American Institute of Architects from 1987-1995; and Harold Roth, F.A.I.A., B.Arch. '56, founding partner of Roth and Moore Architects in New Haven, Conn.

"The Distinguished Alumni Awards honor those who have achieved distinction in their careers through their vision, leadership and high standards," said Dean Cynthia Weese, F.A.I.A. In addition, Norman Moore, B.Arch. '33, a retired hospital architectural consultant, received the Dean's Medal.

Moore was recognized for his dedication to architectural teaching and his continuing generous support of the School of Architecture. Moore and his sister, the late Ruth Moore Garbe, B.A. '29 and M.A. '30, established the Ruth E. and Norman G. Moore Professorship in Architecture in 1986, the school's first endowed professorship.

For The Record

For The Record contains news about a wide variety of faculty, staff and student scholarly and professional activities.

Of note

Daniel C. Brennan, M.D., assistant professor of medicine, was elected a fellow of the American College of Physicians, the professional organization of internists. ...

Theodore J. Cicero, Ph.D., associate vice chancellor for animal affairs, associate dean and professor of psychiatry and of anatomy and neurobiology, received a \$508,829 four-year grant from the National Institute on Drug Abuse for a project titled "Endocrine Pharmacology of Psychotropic Drugs." ...

William W. Clark, Ph.D., professor of physiological acoustics in the Department of Speech and Hearing, interim director of research and a senior research scientist at the Central Institute for the Deaf, received the 1995 Media Award from the National Hearing Conservation Association. He received the award during the association's annual meeting in Cincinnati. Clark has been featured in several national newspapers, magazines and on TV programs about the effect of noise on hearing loss. ...

Memory Elvin-Lewis, Ph.D., professor of microbiology in biomedical science, was honored with the Best Paper Award from the World Congress on Biotechnological Development in Medicinal Substances of Plant and Marine Origin. She was cited for her paper on "Optimizing Drug Discovery from Asian Medicinal Systems," which she presented at the congress' meeting in Lucknow, India. ...

Jean S. Moog, director of deaf education at the Central Institute for the Deaf, received the Laurel Award for outstanding alumna of the year from Mary Institute and St. Louis Country Day School. She is a member of the Mary Institute Class of 1951. She was recognized for her dedicated service at the institute and for improving the quality of life for many individuals. She received the award during a ceremony at the school. ...

Michael L. Nonet, Ph.D., assistant professor of anatomy and neurobiology, has been named a 1995 Searle Scholar. Over the next three year-period, he will receive an additional \$180,000 to support a research project on "Genetic Analysis of Neuromuscular Junction Development." The Searle Scholars Program, based in Chicago, honors scientists whose innovative work suggests the potential for significant achievements in biological research. ...

David H. Perlmutter, M.D., professor of pediatrics and of cell biology and physiology, received a \$623,125 four-year grant from the National Institute on Aging for a project titled "The Serpin-enzyme Complex Receptor and Alzheimer's Disease."

Speaking of

During the Association for Asian Studies' annual meeting in Washington, D.C., **Karen L. Brock, Ph.D.**, associate professor of Japanese art history, **Rebecca Copeland, Ph.D.**, assistant professor of Japanese literature, **Marvin Marcus,**

Ph.D., associate professor of Japanese literature, and **Virginia Marcus**, senior lecturer in Japanese, presented papers. Brock presented "Re-presenting the Founder: Ninshō's Painted Life of Ganjin." Copeland delivered "Meiji Journals and the Construction of the 'Woman Writer.'" Marvin Marcus presented "The Personal Voice in Meiji-Taishō Literary Journalism." Virginia Marcus delivered "Authentic Spoken Japanese: Not an Impossible Goal." ...

Kenneth Chilton, Ph.D., acting director of the Center for the Study of American Business, spoke on "How American Manufacturers Are Facing up to the Global Marketplace" during the Midwest Academy of Management's annual conference in St. Louis. ...

DeeAnna Clift, a doctoral candidate in history, presented a paper titled "From Pragmatism to Partisanship: The Politicization of Business in Allende's Chile" at the joint meeting of the Rocky Mountain and Pacific Coast conferences on Latin American Studies in Las Vegas. ...

Raymond L. Hilgert, D.B.A., professor of management and industrial relations, presented two papers at the Midwest Business Administration Association's annual meetings in Chicago. The first paper was titled "The Family and Medical Leave Act: A Survey and an Analysis of Its Impact and Applications." The second paper was titled "How Business School Alumni Evaluate a Course in Business Ethics: Results of a Survey." ...

Charles L. Leven, Ph.D., professor emeritus of economics, spoke on "Origins and Development of Regional Economics and Regional Science" and "Recent Trends in U.S. Central Cities Compared With Suburbs" at Bocconi University in Milan, Italy. In addition, he delivered a talk titled "Theoretical and Practical Issues in Evaluating Urban Quality of Life" at the University of Venice in Italy. ...

At the International Symposium on Solar System Ices held in Toulouse,

France, **William B. McKinnon, Ph.D.**, associate professor of earth and planetary sciences, delivered a paper on the "Geodynamics of Icy Satellites." ...

Robert P. Morgan, Ph.D., Elvera and William Stuckenberg Professor of Technology and Human Affairs, spoke on "Reflections on the Early History of Technology-policy Programs" at a conference that celebrated the 25th anniversary of Carnegie-Mellon University's Department of Engineering and Public Policy. The conference was held at the university in Pittsburgh.

On assignment

Glenn C. Conroy, Ph.D., professor of anatomy and neurobiology and of anthropology, was elected to the American Association of Physical Anthropology's executive committee during the group's 64th annual meeting in Oakland, Calif.

To press

A. Peter Mutharika, J.S.D., professor of law, wrote an essay on "The Role of International Law in the 21st Century: An African Perspective" that will be published in the Fordham University International Law Journal's May issue. ...

Daniel D. Picus, M.D., chief of vascular and interventional radiology at the School of Medicine's Mallinckrodt Institute of Radiology and associate professor of radiology, was named editor-in-chief of The Journal of Vascular and Interventional Radiology.

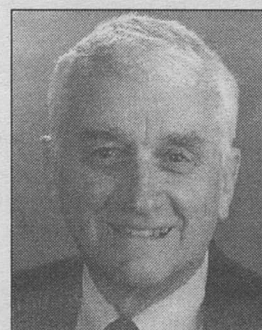
Guidelines for submitting copy:

Send your full name, complete title, department, phone number and highest-earned degree, along with a typed description of your noteworthy activity to For The Record, c/o Carolyn Sanford, Campus Box 1070, or p72245cs@wuvmd.wustl.edu. Items must not exceed 75 words. For information, call Sanford at 935-5293.

Jerome Cox and Jonathan Turner receive council's technology award

Jerome R. Cox Jr., Sc.D., Harold B. and Adelaide G. Welge Professor of Computer Science, and **Jonathan S. Turner, Ph.D.**, Henry Edwin Sever Professor of Engineering and chair of the Department of Computer Science, recently were cited for their outstanding achievement and contributions to technological development in St. Louis. The professors were honored during the Economic Council of St. Louis County's annual breakfast at the Frontenac Hilton.

At the ceremony, St. Louis County Executive Buzz Westfall presented Cox

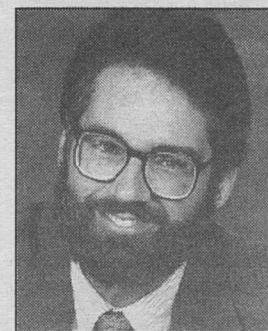


Jerome R. Cox

and Turner with the council's Dr. William D. Phillips Award for Technology Development. The award is named after the late Washington University chair of the Department of Chemistry, who also served as chair of the National Critical Technologies Panel in 1990-91 at the request of then-President Bush.

Cox, who also is director of the Washington University Applied Research Laboratory, and Turner are internationally recognized as pioneers in broadband, high-speed telecommunications and switching technologies. In addition, they have worked with a number of collaborators at Washington University on applications of advanced networks in science and medicine. In particular, the Medical Doctor's Workstation, developed with collaborators at the School of Medicine's Mallinckrodt Institute of Radiology, gives

hospitals and doctors in rural Missouri access to the medical expertise and specialties in the BJC Health System. Late last year, Turner was installed as the Henry Edwin Sever Professor of Engineering.



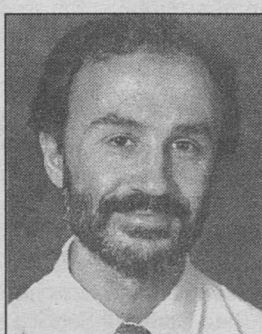
Jonathan S. Turner

The Economic Council of St. Louis County is a not-for-profit economic development agency designed to create high-quality business and employment opportunities for long-term, diversified economic growth throughout St. Louis County and the St. Louis region. The council oversees several local and regional economic development programs.

Campus Authors

The following is a recent release available at the Campus Bookstore in Mallinckrodt Center on the Hilltop Campus or at the Washington University Medical Bookstore in the Olin Residence Hall. For more information, call 935-5500 (Hilltop Campus) or 362-3240 (School of Medicine).

"God's Unruly Friends: Dervish Groups in the Islamic Later Middle Period, 1200-1550" is the title of a new book by **Ahmet T. Karamustafa, Ph.D.**, associate professor of Islamic thought and Turkish literature and director of the Center for the Study of Islamic Societies and Civilizations. A new ascetic movement emerged in the Islamic Later Middle Period that differed widely from previous versions of Islamic renunciation. In their zeal to reject human society, the new renouncers elevated asceticism to unprecedented heights and welded it with such striking forms of social deviance as nudity and the use of intoxicants and hallucinogens. The solitary mendicant, the wandering group of dervishes, and the partially settled community of disciples all presented different manifestations of this new, nonconformist dervish piety. "God's Unruly Friends" is the first focused inquiry into this social movement of renunciation that is routinely dismissed as a manifestation of popular religion. (University of Utah Press, Salt Lake City)



Obituaries

Eric Lothman, former neurology professor, dies

Eric W. Lothman, M.D., Ph.D., a former assistant professor of neurology, died April 15 in Charlottesville, Va., after suffering an apparent heart attack while jogging. He was 47. Lothman joined the School of Medicine in 1975 as an intern in medicine. In 1979 he was appointed assistant professor of neurology. He left the School of Medicine in 1983, the same year that he joined the Department of Neurology faculty at the University of Virginia.

Opportunities & personnel news

Hilltop Campus

The following is a list of positions available on the Hilltop Campus. Information regarding these and other positions may be obtained in the Office of Human Resources, Room 126 North Brookings Hall, or by calling 935-5990. Note: All positions require three letters of recommendation.

Administrative Assistant 950215. *Board of Trustees.* Requirements: some college, bachelor's degree preferred; typing 50 wpm with accuracy; efficiency in word processing and data processing; creativity in developing and improving existing records and forms; enjoys bookkeeping, both in keeping track of budgets and expenses and developing reports for the Board of Trustees account; skill in proofing minutes and reports; appreciation of the need for accuracy, even in routine things; interest in maintaining organized data and filing systems for efficient retrieval; pleasantness with fellow workers and external constituencies on the phone; willingness to work occasionally outside of office hours to set up meetings; five years secretarial experience. Clerical tests required.

Software and Network Manager 950231. *Department of Economics.* Requirements: undergraduate degree or equivalent experience; preferred languages include BASIC, C, Fortran, SAS, UNIX. Resumé required.

Department Secretary 950232. *Alumni and Development Programs.* Requirements: high school graduate, associate's degree preferred; typing 40 wpm with accuracy; strong background with personal computers; experience with Microsoft Word preferred; pleasant, professional manner with co-workers, volunteers, vendors; ability to handle multiple tasks in an organized, accurate and timely manner; excellent verbal and written skills; ability to work extra hours if necessary. Clerical tests required.

Materials Distribution Assistant 950233. *Facilities Planning and Management.* Requirements: high school graduate, some college or technical school preferred; retail or wholesale inventory experience desirable; mechanical aptitude and knowledge of electrical, plumbing, HVAC, and hardware desirable; dependable, honest and reliable; ability to lift objects up to 50 pounds; good communication skills; ability to use two-way radio and telephone. Resumé required.

Nurse Practitioner 950235. *Health Service.* Requirements: bachelor's degree in nursing; five years gynecological experience. Resumé required.

Senior Internal Auditor 950236. *Accounting Services.* Requirements: undergraduate degree; CPA or CIA preferred; three years of professional auditing experience; ability to develop clear, concise, and thorough audit workpapers and audit reports; proven ability to work harmoniously with people and to communicate effectively, verbally and in writing, with all levels of faculty, management, and operating staff; familiarity with data processing systems and procedures; awareness of the use of flowcharting techniques and computer capabilities as audit tools. Resumé required.

Personal Computer Support Technician 950237. *School of Law.* Requirements: certificate or associate's degree, bachelor's degree preferred; extensive experience with IBM mainboards, add-on cards, hard disk drives, communication hardware and software; some network experience helpful; experience with a variety of personal computer-based software, specifically WordPerfect, Windows, spreadsheets, scanning (QCR), and database; strong DOS background; ability to stay on track regardless of interruption and to do so without prompting; ability to work independently for long periods without instruction; excellent verbal communication skills. Resumé required.

Administrative Specialist 950241. *Department of Earth and*

Planetary Sciences. Requirements: some college; five years general office experience; proficiency with advanced word processing software, WordPerfect 5.0 or higher strongly preferred; experience with DOS, Windows, and Lotus 1-2-3 preferred; ability to interact courteously and efficiently with faculty, staff, students and visitors; ability to organize and prioritize work assignments; ability to master administrative procedures; ability to work under minimal supervision; ability to meet deadlines; ability to supervise and train student assistants. Clerical tests required.

Senior Project Leader 950242. *Computing and Communications.* Requirements: some college; minimum of five years data processing experience; proven ability to design, program and install major data processing systems; proven ability to lead others in data processing project development; proven ability to design, write and install MANTIS and COBOL; IBM mainframe and personal computer experience preferred; willingness to work the night shift. Resumé required.

Medical Campus

The following is a partial list of positions available at the School of Medicine. Employees who are interested in submitting a transfer request should contact the Human Resources Department of the medical school at 362-4920 to request an application. External candidates may call 362-7195 for information regarding application procedures or may submit a resumé to the Human Resources office located at 4480 Clayton Ave., Campus Box 8002, St. Louis, Mo., 63110. Please note that the medical school does not disclose salary information for vacancies, and the office strongly discourages inquiries to departments other than Human Resources.

User Support Specialist 950748-R. *Medical Computing Services.* Requirements: bachelor's degree

in related discipline or equivalent technical training preferred; experience with DOS, Windows, MACROS and common office support software packages.

Project Leader (Data Processing) 950750-R. *Medical Computer Network.* Requirements: bachelor's degree in computer science, management information systems or engineering with one to three years experience managing a technical team.

User Support Technician 950754-R. *Washington University Shared Billing Collection Service.* Requirements: associate's degree in relevant field or equivalent training; two to four years experience in medical business environment in billing, scheduling or management preferred; IDX experience.

Dialysis Nurse 950764-R. *Kidney Center.* Schedule: Full time, 12.5 hours per day, three days per week, rotating Saturdays. Requirements: graduate of an accredited school of nursing with Missouri license.

Surgical Assistant-Animal 950769-R. *Cardiology.* Requirements: associate's degree, bachelor's degree preferred; animal surgery skills; ability to analyze data and plan projects independently.

User Support Analyst II 950774-R. *Medical Computer Network.* Requirements: bachelor's degree in computer science, management information systems or engineering, plus one year of experience in providing end-use support and one year experience with networking applications; expertise with Windows operating system and Macintosh.

Statistical Data Analyst 950780-R. *Finance Office.* Requirements: high school graduate or equivalent with three years related work experience; experience in FOCUS report writing, data management, spreadsheet development and account analysis; IBM or Macintosh personal computer experience.

Statistical Data Analyst 950784-R. *Biostatistics.* Requirements: bachelor's degree, master's degree preferred; SAS experience with data analysis or data management.

Duties include assisting investigators in the design of experiments, clinical trials and epidemiological studies.

Medical Secretary I 950790-R. *Metabolism.* Requirements: high school graduate or equivalent; some business or secretarial school training preferred; experience with WordPerfect and Lotus 1-2-3 or other spreadsheet software; knowledge of medical terminology; typing 60 wpm.

Medical Research Technician 950845-R. *Anatomy.* Requirements: bachelor's degree with strong background in molecular biology, cell biology and neurobiology; individual with working knowledge of genetics and molecular (DNA) techniques preferred. Resumé required.

Programmer Analyst I 950870-R. *Washington University Shared Billing Collection Service.* Requirements: bachelor's degree with two years application support, including programming experience; knowledge of physician billing system, preferably M,C,RDB or SYBASE application.

Q&A

Addressing employee questions concerning the Washington University community

Q: How come Washington University employees do not qualify for a discount in Barnes Hospital cafeteria? Now that we will have badges to wear will that qualify for a discount?

A: Washington University employees do not qualify for a discount in the Barnes Hospital cafeteria because that is a benefit for Barnes employees. Although some University employees wear a badge for security

access to the hospital, they are considered Washington University, not Barnes employees.

— **Judith Mahoney, director of human resources, School of Medicine**

Submit questions about the University, which have broad appeal, to Q&A, c/o Susannah Webb, Campus Box 1070, or p72245sw@wuvmd.wustl.edu. Questions will be answered by the appropriate administrator. Though employee questions will appear anonymously in the Record, please submit your full name, department and phone number with your typed question. For information, call Webb at 935-6603.

Engineering program appeals to minorities, women and blue collar workers — from page 1

take pre-engineering core curriculum courses in mathematics, science, introductory engineering and other disciplines at the University of Missouri-St. Louis from faculty there, then advance to the Washington University upper division engineering courses and laboratories taught by Washington University engineering faculty to complete the degree. Students have the best of both worlds. During their first two years, they can access a new computer laboratory established by the McDonnell Douglas Foundation at the University of Missouri-St. Louis and acclimate themselves into an academic environment; once in upper division, they add the expertise of an established engineering faculty and a wide range of laboratories, libraries and other services at Washington University.

For a student enrolled in a traditional engineering program, say at Washington University, the pre-engineering requirements generally take about two years, as would the upper division courses. But for non-traditional students in the joint program, a conservative graduation estimate, from start to finish, is about seven years.

The degree is granted from the University of Missouri. Tuition costs the University of Missouri-St. Louis rate of between \$123 to \$155 per credit hour, in contrast to the \$765 per credit hour rate at Washington University. The program already boasts its first graduate, Michael Paul Harlow, who graduated with a bachelor's degree in electrical engineering in August 1994. Darby and Shields expect their next student to graduate from the program in spring 1996.

One of the more impressive aspects of the program is its appeal to minorities, women and blue collar students, many of

whom are the first of their families to go to college. Twenty-five percent of the 188 students enrolled represent minorities, with 15 percent of the total number African-American. Fifteen percent of the students are women.

Washington University School of Engineering and Applied Science Dean Christopher I. Byrnes, Ph.D., said the revolutionary concept of pooling the resources of two vastly different institutions to create one engineering program is in keeping with engineering's history from the time of the ancient Greeks.

"Engineering has played a role in most of the evolutions and revolutions of society, and this program is no exception," said Byrnes, who with University of Missouri-St. Louis Chancellor Blanche M. Touhill, Ph.D., University of Missouri System President George Russell, Ph.D., and Washington University Chancellor William H. Danforth, played a key role in the program's inception. "Many higher education institutions today are searching for ways to control costs and deliver sound educational programs. We're confident that this endeavor will continue to be a model of public/private university cooperation, and my hope is that it is seen as one of the many ways engineering serves society."

"Traditionally, engineering has been one of the key professions that has moved people from blue collar society into white collar society. It is one of the most popular transitional vehicles available to society. The Washington University School of Engineering and Applied Science views this program as a way to reach out to our community at large, a part of our overall mission."

Rick Grodsky, Ph.D., assistant profes-

sor of electrical engineering at Washington University, is the electrical engineering program coordinator for the joint program. He teaches two classes a year in the program, and currently advises about 30 students. The Joint Undergraduate Engineering Program student is far different from the traditional full-time student, Grodsky said.

"I think these students have a high level of maturity, on average, and they're very hard-working and disciplined," he said. "They've set a very difficult goal and work slowly at it. They make a tough compromise between work, family and their education. In general, they may lack the math backgrounds that younger, traditional students have. This is mostly because there has been such a lag between the time they took their last math courses. But this is no show-stopper; they're able to compete, grasp the concepts and become talented engineers."

"One of the intangibles to success in the joint program is the students' support from their families," Shields said. "We find lots of instances where families help out in many ways."

At student Mary Field's home in Florissant, a northern suburb of St. Louis, husband Bill is good-naturedly called "Mr. Mom" by children Mike, 19, Chris, 16 and Mindy, 13. All pitch in with housework and cooking throughout the week, though Bill Field, who operates his own business, First Rate Lighting Service Inc., out of the home, plans and cooks most of the meals.

A student now for seven years, the 40-something Mary Field graduated with an associate's degree from St. Louis Community College at Florissant Valley in 1993, then was part of the first wave of students

in the joint program that began in August 1993. Field, who works full-time as a laboratory technician at Emerson Electric Co. in St. Louis, has been taking one or two courses each semester since then. She's taking junior-level courses on the Washington University campus and plans to get her bachelor's degree in mechanical engineering in four years. She wants the engineering degree for better work opportunities in the future.

"I was one of those people who couldn't go to college right after high school. If it weren't for this program, I'd have had to change my major because there's nothing else nearby to offer night classes in engineering, nor a degree in mechanical engineering, which is my interest. For me, the program is a great opportunity to achieve my goal at the right time in my life."

Nearly 20 St. Louis industries provide financial aid to the program through scholarships and other support. Darby said the program is reaching out to the community to explain its advantages and the notion of what engineering is through projects with community service organizations and engineering open houses, among others.

Darby noted that the University of Missouri-St. Louis would have needed an initial investment alone of more than \$20 million to run its own undergraduate engineering program. The estimate does not even include the cost of hiring new faculty.

"The joint engineering program makes so much sense financially," Darby said. "I think our concept will become a popular one in this new era of university efficiency through cooperative efforts."

— **Tony Fitzpatrick**